

Remarks/Arguments

Claims

Claims 1-9 and 17-22 were pending in the application. Claims 1-9 and 17-22 were rejected. Claims 1-4, 6-17, and 19-22 are canceled. Claims 5 and 18 are currently amended and claims 23-35 are new. Claims 5, 18, and 23-35 remain.

Rejections under 35 U.S.C. 102

The Examiner has rejected claims 1-5, 8-9, and 22 under 35 U.S.C. 102(b) as being anticipated by Li (U.S. 4,633,309). The new and amended claims currently presented include limitations not disclosed in Li.

Rejections under 35 U.S.C. 103

Claim 6, which added to claim 5 the limitation of using OFDM for modulation of the network signal, was rejected under 103(a) as being unpatentable over Li in view of Langlais (U.S. 6,019,932). Claim 5 has been amended to include this limitation of claim 6. Amended claim 5 also includes the limitations of claims 7-9, now canceled. The limitations of claim 5 were in previous dependent claims and no new matter has been added.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP section 2143.

Regarding the present claims, there is no suggestion or motivation in the references or in the knowledge generally to modify the references or combine the teachings. Neither Li nor Langlais recognizes the multipath condition created by a strong signal reflection intentionally created within the building wiring, therefore, neither reference suggests or provides motivation to apply OFDM modulation to reflected signals in coaxial cable building wiring to enable communication over the wiring.

Langlais discloses OFDM for head-end to terminal communication and recognizes that "OFDM is more robust against time domain impulse interference due to its long symbol time... classic impulse noise spreads uniformly across a communication's channel", Col 10, line 55-58. Langlais does not recognize the problem of frequency selective channel impairments caused by signal reflections created by having a strong signal reflector at the point of entry. **Langlais does not disclose the use or benefit of a signal reflector.**

Li discloses a signal reflector at the point of entry for reflecting a signal transmitted by a master decoder to several slave decoders. **Li does not recognize the multipath environment created by the high pass signal reflector.** Further, the control message of Li is not a broadband signal that would require mitigation of impairments. The nature of Li's system is different from applicants. The signal transmitted by the master decoder originated at the cable head end, is received by the master decoder, then frequency translated and transmitted towards the point of entry to be reflected by the high pass filter at the point of entry.

In Li, a slave decoder can receive messages only from a master decoder: "the slave decoder cannot receive control messages other than those which are retransmitted from its master decoder." Li, Col 2, lines 66-68. Li does not disclose a system that enables terminal devices to communicate bidirectionally with other terminal devices, but instead only discloses a system that allows one device to broadcast to several devices.

It would not be obvious to combine the OFDM transmission system of Langlais with the signal method of Li. Langlais teaches a two-way point to multipoint transmission system using OFDM to establish communication between one upstream unit and a plurality of downstream units. Langlais does not

teach communication between the down stream units. The other reference, Li, does not recognize the multipath environment created by the high pass signal reflector and the need for a mechanism to overcome the frequency selective channel impairments required by a broadband signal. There is no motivation in Li or Langlais to apply the teaching of Langlais because there is no problem identified in Li or Langlais of frequency selective fading due to the signal reflector. It is only applicant's disclosure that recognizes the problem of multipath condition and the need to overcome the frequency selective channel impairments when employing a signal reflector, and thus applicant's disclosure presents the motivation to combine OFDM with a signal reflector. See application page 17, lines 27-30.

Claim 18 is currently amended to depend on claim 5. New claims 23 and 24 depend on claim 5. Support for these limitations is found in the application at page 18, lines 12-28. No new matter has been added.

Claim 6 is patentable over the combination of Li and Langlais and allowance is respectfully requested.

New Claims

New claims 25-28 are presented. Support for these claims is found in the application in original claims 1, 5, 6, 7, 8, and page 18, lines 12-28. No new matter has been added. These claims include limitations of using a signal reflector with OFDM modulation and are patentable over Li and Langlais as argued above for claim 6.

New claims 29-35 are presented. Support for these claims is found in the original claims and the application page 12, line 24 to page 13, line 9; page 13, line 30-32; and page 19, lines 14-18 (related to equalizers), and page 19, lines 6-1 (related to error correction). No new matter has been added.

Equalization disclosed and claimed is useful for correcting impairments to the frequency response of the channel caused by multipath signals that result from the signal reflector. Equalization is not taught by Li or Langlais; neither reference recognized the need for equalization. Applicant identifies the problem that "In the frequency domain, a reflection produces ripples in the response of the channel, creating amplitude variations across the pass band." Application page 12, lines 39-31. Applicant

discloses the solution: "An adaptive equalizer in the terminal device receiver creates a filter response that restores a flat frequency response impaired by the multipath signal." Application page 13, 4-7. The use of an equalizer in a network with an intentional signal reflector at the point of entry is not found in or suggested by the prior art.

New claims 25 and 29 are patentable over the prior art and allowance is respectfully requested.

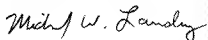
Conclusion

In view of the foregoing, claim 5 as amended and new claims 25 and 29 distinguish the invention from Li and Langlais. These independent claims and the related dependent claims are allowable and such action is respectfully requested.

If it is felt that direct communication would serve to advance prosecution of this case, the examiner is invited to call the attorney at the below listed telephone number.

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Respectfully submitted,



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